

CALL DETAIL RECORD FOR INTERNET CALL WAITING

FIELD OF THE INVENTION

- 5 The present invention relates to a method for logging call completion information in an Internet call waiting environment.

BACKGROUND OF THE INVENTION

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- The present invention deals with fixed and mobile telephony systems, and with Internet related systems and networks. In this context, Internet users having only one telephone connection are not able to answer incoming telephone calls while being on-line via Internet. A possible system to notify Internet users during an active Internet session
- 15 about an incoming telephone call is known from PCT Application No. WO 99/14924. According to this known method it is possible to set up an IP call. However, this known method does not include the logging of management information during the set up procedure. As a consequence, the provider of the Internet Call Waiting (ICW) service has not available management information concerning the provisioning and execution
- 20 of the ICW service on which accounting-, fault- and performance management activities, e.g. for improving the service levels, can be based. This type of management information is not only useful in the case of IP calls to be set up. Also for other types of calls to be set up, such as PSTN calls, the management information is useful for the service provider. Also for situations where the call set up procedure fails, it is desirable
- 25 for the ICW service provider to have available management information.

AIM OF THE INVENTION

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- It is an object of the invention to eliminate the drawbacks of the prior art and to provide a method for the logging of management information during the call completion process in an Internet call waiting environment.

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UMTS, IP, GSM, GPRS, Bluetooth and XML are combined or integrated are not excluded in the present invention.

The ICW application server can be a computer program running on a computer device.
5 In the present invention there are no restrictions related to the operating system or any other aspect relevant to the computer device hosting the ICW application server. The ICW application server can be any type of computer program and is not restricted to IP related protocols and technology. In daily practice, the word server may not only mean a computer program but also a computer device comprising hardware and software. In
10 the present invention neither one of these meanings is excluded. The ICW application server may be a computer program, but may also be a system comprising hardware and software. During the provisioning and execution of the ICW service and during the information logging process the ICW application server can communicate to other entities in the ICW environment. This communication can be via any type of network or
15 communication channel including signaling protocols.

In accordance of this invention, a method is disclosed for logging information during a call completion procedure in an Internet call waiting environment. For this purpose, the method according to the present invention comprises the steps of:

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- creating a service detail record (200),
 - and assigning a value to a parameter of the service detail record (200).

These steps of the method enable service providers to have available management
25 information that is logged during the process of completing a call between a calling party and a called party.

Another aspect of the present invention is that the ICW application server makes use of an ICW user record that comprises information relating to a specific ICW user.

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BRIEF DESCRIPTION OF THE DRAWING FIGURE

35 The foregoing aspects and many of attendant advantages of this invention will become better understood by reference to the following detailed description, when taken in conjunction with the accompanying drawing, wherein:

An ICW application server (4) is connected to the ICW web server (3). The ICW application server (4) may handle provisioning-requests coming from the ICW web server (3), may offer tools used by a helpdesk and the operational maintenance, may store user-profiles of ICW users, may play a role during the execution of the ICW service, and may log information relating to the execution of the ICW service. The ICW application server (4) may also comprise an interface for accessing, by humans or devices, the information that is logged. The ICW application server (4) is responsible for the interaction with an ICW-client (10) during the activation-process and the execution of the ICW service. The ICW application server (4) can be a computer program running on a computer device. In the present invention there are no restrictions related to the operating system or any other aspect relevant to the computer device hosting the ICW application server (4). The ICW application server (4) can be any type of computer program and is not restricted to IP related protocols and technology. In daily practice, the word server may not only mean a computer program but also a computer device comprising hardware and software. In the present invention neither one of these meanings is excluded. The ICW application server (4) may be a computer program, but may also be a system comprising hardware and software. Further, every type of communication protocol may be supported by the application server (4), such as ISDN, ATM, IP, GSM, UMTS, and signaling protocols like SS No. 7.

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The ICW client (10) is a software application on the ICW user's equipment, necessary to use the ICW service. The ICW client (10) may or may not be on the same equipment as the web browser (1). The ICW client (10) comprises VoIP functionality that takes care of answering an inbound call offered from a VoIP Server (9). The ICW client (10) can be downloaded from the ICW web server (3) and can be installed by the ICW user on his equipment. ICW user-dependent service settings can be configured in the ICW Client (10). The VoIP server (9) takes care of rerouting the call to the equipment of the ICW-user. The VoIP server (9) may comprise a VoIP gateway and a SIP-Proxy necessary to map the telephone number of an ICW user to their IP-address.

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Further, there is a switch (5) connected to the ICW applications server (4). The switch (5) is also connected to the VoIP server (9), to a messaging switch (6) and to another switch (12) in the telephony domain. The telephony domain may be fixed, such as PSTN or ISDN, or mobile or a combination of fixed and mobile. A possible functionality of the switch (5) is to take care of rerouting incoming calls to a new destination, as a

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(200) such as A-number (202), A-number presentation (203), B-number (204) and originally dialed number (205) should be set to the applicable values (**step 3**). A timer Client_activated_OK (301) is started: this timer keeps up with the time the switch (5) will wait before routing to the messaging switch (6) in order to be sure that the incoming call can be associated with a user that has activated for ICW (**step 4**). The ICW application server (4) requests the switch (5) to start playing a ring tone for the calling party (**step 5**).

A timer Wait_for_destination_number (302) is started: this is the maximum time the ICW application server (4) will wait before routing the call to messaging switch (6) (**step 6**). The ICW application server (4) updates the service detail record (200): a start of popup field (206) should be set to current date and time (**step 7**). The ICW application server (4) sends a request to the ICW Client (10), using the IP-address (106) in the ICW user record (100), to display a screen pop up on the screen of the ICW user. The IP address (106) is the IP address that is in use for the active Internet session of the ICW user. The request contains the calling party number (if available) and the available choices. The available choices may comprise routing the incoming call to the telephone number of the ICW user ('own number' option), to voice mail, to set up an VoIP call between the calling party and the called party or to neglect the incoming call. The calling party number can not be included in the request if the calling party number is restricted (**step 8**). Within the period defined by the Client_activated_OK timer (301), the ICW application server (4) receives an acknowledgement from the ICW client (10) that the ICW user is activated for ICW service. The acknowledgement contains the phone number and the activation code (**step 9**). The ICW application server (4) establishes that the activation code (105) is correct (i.e. phone number / activation code in reply match phone number (104) / activation code (105) in ICW user's record (100)) (**step 10**). The ICW application server (4) sends a request to the switch (5) for monitoring the call (**step 11**). Within the period defined by the Wait_for_destination_number timer (302), the ICW application server (4) receives the choice 'own number' from the ICW Client (10), including the activation code (**step 12**).

The ICW application server (4) updates the service detail record (200): choice (209) is set to "own number", and popup choice time (210) received should be set to current date&time; timeout (211) should be set to "no" (**step 13**). The ICW application server establishes that activation code is correct (i.e. phone number / activation code in reply match phone number / activation code in ICW user's record) (**step 14**). Depending on